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Let's put it here . . .

Stay alert if you want to keep up with land use changes—there's a new America every morning. Some "building booms" and other shifts are made on the basis of community aims and natural resource information supplied by SCS, conservation districts, and others. But many more need to be.

This month's offering is a sampling of USDA helpfulness in planning on both rural and urban property to avoid environmental damage and meet more positive aims of the owner and the community.

In the lead article (p. 99), USDA Director of Agricultural Economics Don Paarlberg discusses ways to bring rural America out of stagnation.

Gordon Zimmerman (p.100) carves out a role for conservation districts in community planning.

Other articles reinforce these messages with specific examples of factors and sources of help that any developer or planner ought to consider.

COVER: These new homes in the Montgomery Soil Conservation District in Maryland were "planted" to fit the existing topography and forest vegetation.

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Land and people

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Let's redress the imbalance

By Don Paarlberg
USDA Director of Agricultural Economics

"Ill fares the land, to hastening ills a prey . . ." was written of the English countryside nearly 200 years ago. It might be written of rural America today.

Our rural areas are being depleted of people. From 1950 to 1960 the rural population—farm plus nonfarm—declined by 400,000; the urban population increased by 28 million. These trends have continued.

About one-fifth of the rural population consists of farm people. The others live in the countryside or in small villages. Since 1960 the farm population has been declining at an annual average rate of about 5 percent, an accelerated pace.

Most of those who migrate from the rural areas leave in their teens and twenties, when on the verge of their productive years. They carry with them the investment in their upbringing and education. Conservatively estimated at $15,000 per person, this human investment is a contribution from the rural areas that runs about $12 billion a year, several times the total of all subsidies provided by agriculture.

What becomes of these people? They move into our great cities. Without necessarily desiring it and almost by default, we are becoming an urban society. Seventy percent of our people now cluster in cities that cover 1 percent of our land area. If present trends continue unchecked, 80 percent of our people will be living in metropolitan areas by the year 2000, and most of them will be crammed into five super strip-cities.

And will these be alabaster cities, gleaming "undimmed by human tears"? Not likely. The migrants concentrate, unassimilated, in Detroit, in Cleveland, in the South Side of Chicago, in Watts, in Harlem, in Indianapolis, and in a hundred other cities. Smog, congestion, water pollution, law enforcement, and other problems of the megalopolis beset them and their uneasy neighbors. By generating the kind of "urban crush," they create a problem in the cities to which they go. By depopulating the countryside, they create a problem in the rural areas from which they come.

But move they must, if there are no nearby jobs.

And why are there so few jobs in the rural areas?

For several important reasons.

First, because of the agricultural revolution. The mechanization of agriculture has so multiplied the productivity of human beings that the production of our food and fiber is now accomplished by 5 percent of our population, as compared with about 18 percent only two decades ago. There simply are not as many farm jobs as there were. These revolutionary changes have by no means run their course. The Department of Agriculture says that from 1965 to 1980 farm employment will experience an additional decline of more than one-third.

Second, because imagination has been lacking. Little has been done to create job opportunities, in the rural areas, for the people forced out of agriculture. Rural people do very well at off-farm jobs if the jobs are there and if they have the necessary education. They have

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What the American people really want and will work for, they can have.

manual dexterity and they know how to work. They do not want to live on a dole. If off-farm jobs are available within driving distance, they continue to live in their accustomed surroundings, among their friends and families, benefiting from increased incomes, providing improved education for their children, and utilizing the services of the local community. But without such jobs they must go on relief or move to the city.

Seemingly, almost everything has conspired to prevent the creation of jobs in rural areas:

—Federal farm programs have cut our cotton crop to 12 million acres compared with 43 million acres before the programs began.

—Tobacco acreage is now only half as great as 35 years ago.

—Local communities have not provided the services and utilities needed to attract industry.

—Wage policies have discouraged industry from expanding into areas of abundant labor.

—Industry, which has been urban-minded, has not sufficiently sought to decentralize.

—The rural labor force lacks the Federal employment services available to urban workers.

—Education policies have discriminated against the poorer areas. For example, a survey showed that allocations from the Elementary and Secondary Education Act of 1965 provide more than twice as much help per pupil to the counties ranking highest in the index of rural well-being as they do to those ranking lowest ($350 against $157).

—Farm programs have continually sought parity of prices as an objective, when they should have sought parity of opportunity. For more than 30 years these programs have been commodity-oriented, when they should have been people-oriented.

It has been fashionable to point critically at the hardships that resulted from the Industrial Revolution of the 19th century and to find fault with those who could have alleviated these difficulties.

Now, in the 20th century, we confront an Agricultural Revolution that creates problems and opportunities in some ways similar to those of the Industrial Revolution. There is no reason to accept, unquestioned, the social and economic consequences of this Revolution. Efforts should be made to determine and assert the public interest.

The American people want some balance between the rural and the urban sectors. There should be some opportunity for those who wish to live in the country to find decent work there, to have access to reasonably good education and health services, and to pursue a way of living that gives diversity and balance to our economy.

These things can and should be done:

(1) **Locate more of our new factories in rural areas.** This can be done by local, state, and national tax policies to provide realistic economic incentives. Guaranteed loans can be used, with favorable interest rates. Better roads, better schools, and better public utilities will help. Factories may now be operated successfully in areas where this was formerly not possible. At an earlier time, when transportation was poor and the emphasis was on heavy industry, a factory had to be close to its raw materials or to its markets. This is far less true today. The Federal-Interstate Highway Program has greatly facilitated transportation. For some industries a plant can now be established almost wherever a trained labor supply and the necessary supporting services are available.

(2) **Provide better education for rural people.** This means better education of all kinds, at all levels: elementary, secondary, and advanced; vocational, technical and academic; continuing education for adults, apprenticeship, retraining, and all the rest. It means equal education opportunities for all races including minority groups which comprise about one-fourth of the rural poor. Education is a great adjuster; people who are making great changes are in greater-than-ever need for it. Rural young people move freely across state and county lines. Sharing the cost of education on a national basis is appropriate in view of the fact that we are concerned

Tomorrow on

By Gordon K. Zimmerman
Executive secretary
National Association of
Conservation Districts,
Washington, D.C.

here with a national problem. The need is greater where the taxable wealth is most scarce.

(3) **Provide improved facilities in rural areas.** This includes public services as well as improved private housing. Public needs include water, sewer, electric power, communication, and recreational facilities. Rural housing in many areas is substandard and needs improvement. Rural areas must be made more pleasant places to live in if people are to be held or attracted. Government should help in all these areas with loans and grants.

What is here proposed is not a blueprint for the economy, with a certain calculated number of people on farms or a carefully computed balance between rural and urban areas. Rather, we should redress the imbalance in education and opportunity which has worked to the disadvantage of the rural areas and threatens to make us almost totally urban.

To undertake the actions here offered does not introduce a rural bias; rather, it would remove an urban bias, largely unintended, that has been allowed to develop. We should provide the equality of opportunity which will give our people a chance to develop the kind of society they want. If this is done, we can safely leave to the people themselves the decision as to the balance between rural and urban living.

There is no one-shot, sure-fire, cure-all solution to rural unemployment, underemployment, and general rural underdevelopment. There are a variety of programs, policies, and procedures that singly and in combination can help to mitigate the consequences of this rural stagnation. What is required is a multipronged attack on the numerous ills that beset our rural areas.

What the American people really want and will work for, they can have. We are not the helpless objects of blind economic forces; we are capable of helping to shape the institutions which in turn help to shape us. ♦

our own terms: A role for conservation districts

High on the list of assets treasured by a free citizen in a democracy is the power of choice. Individually and collectively we exercise it day in and day out in what we buy, how we vote, what we read, and in dozens of other ways. It is the power which distinguishes the free man.

Choice is the fruit of judgment and nowhere is it more important than in shaping the kind of community we would like to live in. The community may be small, involving no more than the immediate neighborhood. It can be larger: A township, conservation district, county, watershed, or even the great political and geographic entities—a state, region, or the whole Nation. To the extent that natural resources affect or determine the nature of any of these communities, there is a clear opportunity for district leaders to exercise a constructive influence and make valuable contributions to agreeable living.

Under the pressures of population change—growth or shrinkage—progressive communities all across the country are re-assessing their future. They are taking stock of their human assets, their institutions, and their physical resources, which together must provide the foundation for new directions and beneficial change. Communities are weighing the possibilities and probabilities of developing a more satisfying life of dignity, happiness, and service for their families. That's what it's all about—or should be.

Wherever and whenever communities undertake to improve their lot, districts can and should help. Whether the goal is economic development, environmental improvement, flood prevention, water supply, better farm and ranch management, resource protection, or orderly suburban growth, districts can contribute to the attainment.

When district leaders are functioning effectively, they bring experience and practical resource knowledge to the community planning table. They understand the local resource capabilities and are able to identify the development opportunities as well as the resource-management options.

District leaders also are in a position to buttress community planning with specialized and expert assistance from a range of public and private sources. Whether the community is a whole district, part of a district, or several adjoining districts, responsible district officials have access to scientific, financial, educational, and other kinds of professional help. They can bring to bear on the planning process the contributions of soil scientists, economists, forecasters, biologists, planners, engineers, and other specialists engaged in state and federal programs directly or indirectly involved with natural resources.

Planning is an exercise in charting orderly routes to desired goals. It is an expression of preference and a choice from the available alternatives. The resources at hand constitute the rational starting place for any well-designed community planning effort. District leaders not only can stress this approach and press for full consideration of resource values, they also can give muscle to the power of choice at the grass roots, which is to say the community. ♦

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Team helps Connecticut grow in the right places

Development can be a different ballgame when a team bent on maintaining environmental quality is allowed to do some coaching. The Eastern Connecticut Resource Conservation and Development Project has a Development Practices Team. It advises developers and local planning commissions of construction-site possibilities as well as limitations. The project serves to some extent as a development-staging mechanism for an 890,000-acre swath of greenspace on the urbanizing eastern seaboard.

In keeping with sponsors' hopes of forestalling second-rate development in the project area, the team works with 40 towns and three regional planning agencies.

According to the size, location, complexity of the site in question, the team may include a regional planner, soil scientist, soil conservationist, sanitarian, and an engineer from various agencies.

Any and all of these specialists may be called on by the team leader if early studies show that a site might be developed in a better or more creative way than its owner first envisioned.

The team's aim is to help make the best use of soil, slope, aspect, scenic features, and existing character of surrounding neighborhoods.

Town or regional officials who hear of plans to develop a tract contact the owner and suggest evaluation by the team. If he agrees, the owner requests assistance from the RC&D Project committee through the soil and water conservation district. The team leader then studies the site and soil survey information to determine which team member should make a thorough study.

"This initial screening on the basis of soil limitations is an all-important part of the process," RC&D Project Coordinator William Lucas said. "An onsite review and report is developed by the entire team."

In a typical report, the team indicates the need for and advantages of applying sound land use and conservation-treatment principles and points out or helps identify:

—where site problems may arise because of terrain and kind of soil;

—suggests ways to deal with wetlands preservation, unique or beneficial natural vegetation, streambank treatment, and sewage disposal;

—indicates local housing and recreation needs; and

—advises the developer of sources of professional help.

The team cooperates with private consultants in land use planning and development work. The facts prepared and presented by the Development Practices Team to the local decision-makers enable them to make more than a cursory review of the development plans.

Neither the town nor the developer is required to participate in the program, but both stand to gain.

"While the results may not be as dramatic as those brought about by huge developments in more rapidly growing areas of the state, small developments nevertheless have a profound cumulative effect on the existing community and its resources," Lucas said.

"The availability of the team's services gives added help to towns that already have planning and zoning. It helps those that have no provisions for subdivision regulations."

During the first year of cooperation, the entire team helped with four reviews. Three more sites with inherent soil and water conservation problems were handled by SCS conservationists, in consultation with the developer and town officials after a soil survey was completed.

In one case, soil information about severe septic-tank limitations caused an owner to change his tract from residential development to a low-density recreation area. At another site, owners in the planned 100-home development would likely have had septic-tank failures because of land and water features; the team's review brought a decision to put homes on larger lots, and use part of the site to expand an adjoining park.

The team also has worked out a plan for wildlife plantings and other conservation methods of enhancing a particularly good building site.

The 40 towns in eastern Connecticut will grow to accommodate an estimated threefold increase in population by the end of the century. The Development Practices Team, by working with local units of government, builders, and private consultants before final plans are made, can help guide that growth to enhance the quality of life for Connecticut Yankees, old and new.—CHARLOTTE CONRAD, *information division, SCS, Washington, D.C.* ♦

SCS members of resource teams aid in planning a wildlife marsh (left) and discussing land use concerns in a watershed project.

Township of tomorrow

A community of tree-lined streets, wide and spacious green belts, houses blending into the topography, and silt-free lakes and streams.

A fantasy? Not in the minds of the residents of Oakland Township, Mich. This community is planning its township of tomorrow today.

Oakland Township, 25 miles north of Detroit, is directly in the path of that city's outstretching suburbia. Realizing that its projected population of 50,000 by the year 1990 could cause many land use problems, this township is working with a variety of individuals and groups to insure orderly development.

It was the first municipality in Michigan to pass an erosion control ordinance for developing areas. Builders now are required to include necessary conservation measures on all construction projects.

It is one of the progressive communities in the Nation to develop and pass a conservation ordinance —covering flood-plain zoning, preservation of natural resources, tree planting, beautification, and other measures geared to an orderly growth and development pattern.

The Oakland County Soil Conservation District has worked closely with the Oakland Township Planning Commission during development of conservation ordinances and sediment-control standards. As a result, the district will review all future building projects in the township and check for the inclusion of erosion and sediment-control measures and for their conformity with design principles set forth in the ordinance.—ROBERT G. HALSTEAD AND ELLIS G. HUMPHREY, *area conservationist, SCS, Ann Arbor, and district conservationist, SCS, Pontiac, Mich.* ♦

Cattle in Appalachia

Beef cattle farming in southeastern Ohio's Appalachian country can be as profitable as anywhere in the United States, Bob Evans insists. "Water distribution, high-quality forage, and quality livestock are what it takes to make an operation work."

Evans—known to midwesterners for his sausage products, restaurants, and pure-bred Charolais cattle—proves his statement almost daily to visitors at his 2,000-acre Hidden Valley Ranch near Gallipolis in Gallia County, Ohio. Cattle grazing lush grassland offer support for his argument.

Evans started ranching after he came home from World War II and soon became a cooperator with the Gallia Soil and Water Conservation District. Working with Soil Conservation Service specialists, he has continued to adopt new and sometimes untried grassland-farming techniques. All of his grassland seedings are Kentucky 31 tall fescue, orchardgrass, or bluegrass. Separating them by pastures, Evans is able to manage each grass for its most favorable characteristics. Liquid nitrogen and rotational grazing also help assure long-term, healthy stands. Sericea lespedeza is seeded on new areas until grass seeding can be made. This protects the soil, helps heal erosion, and improves the land for use as grassland. It also provides food and cover for wildlife and good hunting.

Year-round grazing is a recent practice. Wooded areas furnish needed shelter against winter wind and snow. Round bales of fescue hay left in the field are a winter food supply.

"Our herd seems to prefer the open country to wintering in a barn," Evans said. "They are healthier than most sheltered cattle. We also cut down on labor and high building costs."

Evans has built a new pond every year. SCS specialists checked out the new pond sites and designed the impoundments. In addition to 20 ponds, Evans has five spring developments supplying water. He thinks the cost of these water-resource developments has been defrayed by increased efficiency.

The third requirement, along with quality forage and water, is the fast-gaining quality of livestock. The breed is not important if the animals are capable of producing 600-pound-plus calves for fall sales, Evans said.

Land-improvement and cost-saving procedures account for much of the successful ranch operation that has turned Hidden Valley Ranch into a "conservation showcase" with tangible economic benefits for the community. Scores of people are employed either on the ranch, in the sausage plant, or in the local restaurants. Farm equipment, fertilizer, and related agricultural businesses enjoy the side effect of this added prosperity.

"This Appalachian area has a good future," Evans predicts. "We have the land, climate, and ample water for cattle farming. All we need are more people willing to work at building a profitable cattle ranch."—GORDON S. SMITH, *information specialist, SCS, Upper Darby, Pa.* ♦

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A new town fits the land

Two centuries ago, Washington, D.C., and Savannah, Ga., were new towns built according to advanced plans. But a new town of today, Jonathan, Minn., has an advantage in the involvement of a conservation district.

Soil survey data and conservation practices designed to enhance the natural resources of the 2,200-acre development have been worked into plans with the help of the Soil Conservation Service and the Carver County Soil and Water Conservation District.

The new town in southeastern Minnesota is (like the county) named for Jonathan Carver, an 18th century explorer. Jonathan is within the boundaries of the city of Chaska, to the west of the Minneapolis-St. Paul metropolitan area. Both lie in a major growth corridor between Lake Minnetonka and the Minnesota River.

Jonathan was among the first to receive financial assistance through the Department of Housing and Urban Development under a program for new communities. A commitment for potential guarantee of $21 million in debt obligations was signed by HUD Secretary George Romney in February 1970. The initial development is to be doubled in size to accommodate a future population of 50,000.

When plans were announced in the summer of 1967, Carver County's soil survey was completed but not published. SCS District Conservationist Don Berg and SCS soil scientists developed a soil capability map of the area using field mapping sheets. They made urban interpretations showing major building site limitations for Ben Cunningham, Jonathan's chief planner.

This approach to community planning was instigated by State Senator Henry McKnight. Having cooperated with the Carver District since 1959, McKnight knew the source of soil and water conservation assistance. Plans for his beef cattle farm adjoining the new town reflect the benefits of a good working relationship with SCS and the conservation district. "We have to redo our thinking to save the land rather than redo the land to serve us," Senator McKnight said.

Overall planning for land use designated 27 percent of the land for residential areas; 25 percent for recreation and open space; 17 percent for industry; and the balance for roads, lakes, and commercial and religious use. Six new industries already have located in Jonathan.

Among the first targets of conservation activity were critical slopes that needed to be clothed in grass and trees to control erosion and sedimentation. All former cropland is being converted to grass to keep soil in place. Berg recommended a selection of grasses and fertilizers to do the job.

Marsh areas that have long been neither wet nor dry enough to use are to be reflooded to make homes for wildlife and add esthetic value. State forestry and wildlife people are helping plan for full use of wooded areas and nature trails.

Although Jonathan is surrounded by some of Minnesota's "10,000 lakes," it has one of its own, too. Lake Grace, named for Mrs. McKnight, was finished in the spring of 1968 by a private engineering firm that used SCS soils and hydrology data. An apartment complex, a shopping center, and an area designated for cluster development overlook this focal point.

Parks surround the town center by the lake with space for golf, playgrounds, picnic areas, and woods. The entire town is laced with tree-lined greenways for walking or bicycling.

A 300-acre tract adjoining Minnesota University's aboretum and fruit research farm has been set aside as an educational center.

Each village in Jonathan will have its own shopping center, schools, and playgrounds, all linked with the town center by a parkway system. Site selection for village centers was based primarily on terrain analysis. They are large areas of flatland with exceptionally pleasant natural features, centrally located within a logical land area.

A four-building complex of 24 units each is being completed. Village One includes demonstration areas for new-housing concepts such as flexible modular houses and industrially produced "stack" units available in single or multifamily combinations.

Now that the building of Jonathan is underway in earnest, the creative conservation plan of Henry McKnight and his staff is being put to the test. From all indications, Jonathan will continue to be a good example of development based on today's technology that meets the needs of people in a city of the future.—JOHN M. CROSS, *information specialist, SCS, Lincoln, Nebr.* ♦

Build a better crossing— and save money

By Ray Kubie
Assistant area conservationist, SCS, Lincoln, Nebr.

In southeastern Nebraska, an area sometimes plagued by intense, soil-eroding and flood-producing rainstorms, road improvement has become a practical result of conservation planning.

The replacement of rickety or otherwise unsuitable bridges may be undertaken with the building of a dam, which would perform double duty as a container of sediment and a better stream crossing.

Since the late 1940's, when soil and water conservation district supervisors first conceived the idea, the use of drop-inlet structures for road improvement has been readily accepted by boards of county commissioners, watershed conservancy district directors, and Agricultural Stabilization and Conservation Committeemen, as well as the conservation districts.

The pilot and Public Law 566 watershed programs of the Soil Conservation Service gave further opportunity for improvement of roads, both with erosion-control dams and those installed for flood prevention.

Roads match up with watershed dams (left and below) and a grade-stabilization structure (above) for better travel and water control.

Where topography and other considerations permit, either type may be located on the road right-of-way where the structures take the place of bridges or culverts. Where the dams are in drainage courses above county roads, the counties may replace existing bridges, as a part of their regular replacement program, with corrugated metal culverts at a considerable saving to the local taxpayers. Seven such installations were made in Otoe County in 1969. The total to date in that county is 60.

Nemaha County has installed 30 road structures, Butler County 15, Saunders 18, Seward 17 with seven more on the waiting list, Richardson County 12 in recent years (with about 400 in years past), Lancaster County seven, Pawnee County 15, Cass County five, and Johnson County 17. There have been fine examples of cooperation from the Nebraska State Highway Department where problems existed and conditions were feasible for installation. This has been particularly true in the structural phase of the watershed program.

Costs for installation may be borne by an individual farmer or a group of farmers, often in cooperation with ASCS, the county, or local sponsors of watershed projects. The federal government shares the cost of dams in watershed projects. In each case technical assistance is available from SCS.

Combining conservation land treatment with properly located structures produces benefits to individuals and the community in many ways—supplemental livestock water, erosion control, flood prevention, savings in road and bridge installation and maintenance, improved roadways for moving large equipment and reduction of normal traffic hazards, reducing stream pollution from sedimentation, improvement of wildlife habitat and recreation potential, and beautifying the countryside. ♦

Conservation plan aids special school

By Paul Miletello
District conservationist, SCS, Minden, La.

Evergreen Presbyterian Vocational School near Minden, La., occupies 500 acres of campus and farm and pasture land.

It is a training ground where boys and girls who learn more slowly than the majority acquire skills to help them find a place in society.

The school is operated by the Presbyterian Synod of Louisiana, but support comes also from the state and from private sources.

"We help each student recognize those things that he can do to be acceptable in our society," Ralyn Parkhill, director of the school, explained.

The Soil Conservation Service, working through the Dorcheat Soil and Water Conservation District, helps the school with conservation and related jobs as do other federal and state agencies.

"We have developed a conservation plan for our land with SCS technical help," the director said. "The soil survey helped us to decide which areas to use for cropland, pasture, and recreation. With efficient farming, we can produce most of the meat and milk we need here."

Agricultural training at the school consists of dairy, beef cattle, and swine management; use of milking machines and the pasteurization process; planting, cultivating, and harvesting of row crops; fencing; and constructing farm buildings.

Forestry training includes the harvesting of poles, sawlogs, and plupwood; timber-stand improvement; planting and interplanting; maintaining fire lanes; and loading and hauling of forest crops.

Fishing and boating are among recreational activities. Three large ponds, built with SCS engineering help, are stocked with bream, bass, and catfish furnished by the Dorcheat District.

A large part of the farmwork is done by the boys.

"They are learning from experience," Joe Pierson, farm manager, said. "We have boys who are actually running the hog and dairying part of the operation."

At times, groups of students live and work off the campus. The most recent off-campus work was for the city of Minden, La., and the Trailblazer-4 Resource Conservation and Development Project. Crews helped install two water-control structures and planted grass on eroded cutbanks of the city airport.

Farm management and conservation at Evergreen School are helping give mentally handicapped boys and girls a chance in life. ♦

Everything but the kitchen sinks . . .

Watch what you do with Alaskan soils

Different! That's what many visitors say about Alaska. The term fits some of the soils of the vast northland state, particularly those with permafrost.

Permafrost is a condition brought about by extremely low average temperatures. Around Fairbanks—where temperatures may range from −65 degrees to more than 90 degrees Fahrenheit—you will find plenty of permafrost. The term means permanently frozen soil material. The uppermost layer in most soils with permafrost thaws and remains saturated during the summer but freezes in winter. Vegetation provides natural insulation, and water below this "active layer" stays frozen in the soil even when air temperature is above freezing. Permafrost has been found to depths of more than 150 feet around Fairbanks. Normal temperature in the permafrost is 30 to 31 degrees. It takes little additional heat to thaw the soil.

Successful use of soils underlain by permafrost calls for understanding them, a goal undertaken by the Fairbanks Soil Conservation Subdistrict in recent years.

What's the concern? A soil with permafrost "acts up" when the natural cover is removed by people intent on some use other than nature designed for it—such as cultivating it for crops or building houses on it. The permafrost melts, causing the soil to settle.

Most soils with permafrost should not be farmed, but some soils with permafrost are excellent for farming after clearing—except for unstable conditions that come with thawing. Silt loam Minto soils with slopes ranging up to 12 percent, for example, respond well to development for farming and will produce any locally adapted crop.

Minto soils are difficult to use, though, because they contain clear or nearly clear deeply buried ice masses ranging from the size of a football to that of a small house.

After the land is cleared, Minto soils will seem normal but removal of the surface vegetation, which provides natural insulation, allows the summer sun to warm the soil. Three to 5 years after clearing, the surface may begin to settle—slowly, but creating a hummocky surface. A deep ice mass may leave a cavern after thawing. During the spring breakup when soil is saturated the soil over the cavern may suddenly fall —resulting in a topographic condition called "thermokarst" pitting.

In some cases, caverns formed underground have caused farming hazards. One farm operator had the front end of a fully loaded truck fall into a hole. Another had a cow missing 3 days before he thought to check a field with a number of large open pits. Luckily, with a little water and feed, the cow was none the worse for her "pit stop."

On another farm with an unusually large pit, a large tractor was used to fill in the hole. The farmer said only the top of the exhaust stack was visible as the machine worked at smoothing the bottom of the pit.

Common visual evidence of thermokarst pitting is a honeycomb pattern over a field, caused by general settling. Troughs or low areas may be 3 to 5 feet lower than mounds around which they form. This shows

Soil with permafrost can make a fence a roller coaster, a house a story-and-a-half, a field a crater. A Fairbanks couple (above right) checks with the author to avoid homesite problems.

up especially in potato fields seeded to grass. Annual tillage helps fill low areas. When an annually cropped field is seeded to grass, the pitting develops rapidly—in some cases, fields have become too rough to harvest hay in just 5 years. A pitted field can be smoothed, however, so farming operations can be resumed.

One of the better cropland soils in Tanana Valley, Minto can be cropped annually in periodic rotations with green-manure crops.

Areas with Minto soil also *appear* —to the uninformed—to be excellent building sites: Gentle slopes, silt-loam soil, and an excellent view of the Tanana Valley. With the growth of Fairbanks, especially under the influence of the North Slope oil boom, need for good building sites is great, and people are looking for places outside the city for building. A homesite 100 to 200 feet above the valley floor means temperatures 10 to 20 degrees F. higher in winter. That's important when temperatures stay at 50 to 60 degrees below zero for weeks at a time. The higher elevations also are more nearly free of ice fog—a form of air "pollution" common in the Fairbanks area when the mercury goes below minus 30 degrees.

But having a nice clear view isn't much help when your house settles into the ground! Many structures have been damaged by soil subsiding under all or part of the building.

How can people discover where soils are affected by permafrost? The Fairbanks Area soil survey made by the Soil Conservation Service has been a big help. Completed about 8 years ago, it shows locations of each soil with good accuracy and gives hints on proper use or limitations.

There are many soils around Fairbanks that do not include the ice masses—for example, the Chena, Fairbanks, Gilmore, and Salchaket series.

Because of the trend toward building on Minto or other soils with permafrost, the Fairbanks Subdistrict launched a program to inform people about the hazards they might encounter and help them find more suitable sites.

SCS representatives met with bankers and real-estate people. They distributed copies of the Fairbanks soil survey. They explained problems of thermokarst pitting and how to identify soils of the area.

The Borough Planning Commission (the Borough is the equivalent of a county in the lower states) reviewed problems with SCS. A new

zoning ordinance requires all subdivision maps to show soil properties or hazards in the soil survey.

Television and radio programs and newspaper articles discussed the issue. Residents eagerly sought information as an aid to buying land, building, and locating potential drainage fields. The supply of the soil survey was quickly exhausted and a reprint had to be ordered.

Because of his efforts in getting information to the public on permafrost and thermokarst pitting, Henry Gettinger, chairman of the Fairbanks Subdistrict, received the Governor's "Soil Conservation Man of the Year" award in 1969.

The job of getting people to know permafrost and its limitations is not finished. Thousands of newcomers will need the information in the next few years. The story of permafrost is one that will be told and retold thousands of times.—BURTON L. CLIFFORD, *district conservationist, SCS, Fairbanks, Alaska.* ♦

Conservation farming serves a larger purpose

A resident work crew mans a field chopper to prepare mulching material for protecting seeded areas on the Vienna farm.

A 3,500-acre farm near Vienna, Ill., is becoming a conservation showplace. A conservation plan is in effect, worked out by the owner with the help of the Soil Conservation Service and the state's district forester. An agreement is in cooperation with the Johnson County Soil and Water Conservation District.

Owner of the big farm?—the State of Illinois.

The farm is a prison without walls. The 800 or more men who live there—undergoing rehabilitation before returning to their communities—are supervised by officers and teachers carrying no weapons.

When Vernon Housewright became the warden of the institution, he already had helped develop a vocational training program for prisoner rehabilitation. He immediately asked the SCS staff assigned to the district for help to develop a conservation plan.

The 5-mile-long tract of crop, pasture, and timber land is made up of small farms bought 10 years ago. Uplands were eroded and many fields had been abandoned. Woodlands were neglected and fire damaged. Bottom lands at the confluence of three creeks were undergoing periodic flooding. Two areas were in swamp and supported remnants of disappearing species of plant and animal life.

The long-range conservation plan was almost a year in the making. A soils map was the basis for decisions on land use. Then detailed plans included field arrangements, development of water supplies, and specific management practices.

Installing measures called for in the plan and operating the farm are helping the men learn useful skills for their return to the world beyond the farm's boundary.

Of major importance has been planning for erosion control above the 75-acre lake that supplies the farm's water needs. New roads with unprotected banks were a source of silt buildup in the lake.

Major watercourses and acres of borrow area (where topsoil had been removed for construction) needed shaping, mulching, and seeding. Watershed work to relieve the flood hazard also went into the plan.

A site was chosen and design made for a sanitary landfill. Tree planting in odd areas, establishment or improvement of 400 acres of grassland, and development of two recreation areas near the lake were added.

The Nature Preserves Commission recommended preservation of one of the swamps as a zoological study area. This, too, went into the plan.

"We are in the business of conservation here," Warden Housewright said. "Through conservation of our land we are helping with the conservation of people."—EDWARD B. TROVILLION, *district conservationist, SCS, Vienna, Ill.* ♦

Plan for a better future in the heart of Utah

By Carl W. Wilker
Resource conservationist, SCS, Richfield, Utah

The six counties of the Central Utah Multi-County Planning District lie in an area of coveted treasure: Clean mountain air, sparkling streams, and breath-taking scenery.

There are other valued resources, too; and the people are getting ready to do something about all of them.

The old State Capitol at Fillmore and the Temple at Manti, both monuments to Mormon pioneers, are among the area's history-related riches. And if you thrill to stories of the early West, there is the hideout of Butch Cassidy and the Wild Bunch in the Robbers Roost country of Wayne County. The Cassidy family cabin is near Circleville in Piute County.

Other counties in the planning district are Juab, Millard, Sanpete, and Sevier. The 54 communities in the area are home to 35,500 people. Richfield is the largest with a population of 4,410.

County governments and the soil conservation districts serving the area are providing the needed planning leadership. Commissioners of the six counties have a three-man Agricultural and Natural Resource Committee directing natural resource development. This committee is assisted by a three-man Soil Conservation District Steering Committee representing two districts in Millard County and one in each of the other counties. Federal, state, and local agencies assist the two committees.

More than 120 proposals for conservation and development of natural resources have been brought forth by local groups. The leaders estimate that the actions when completed will boost income in the six counties by as much as $2 million. Four-fifths of the income would go directly to the people in the counties.

Conservation use of the rich water resource ranks uppermost in the planning effort. More than 50 of the proposed activities hinge on the use of water, mainly through irrigation. Nearly as many have to do with conservation development of range. Other proposed action includes flood prevention, community improvement, beautification, and public recreation facilities.

Perhaps the most ambitious project is planned for the Sevier Basin, the lower three-fourths of which is located in the planning district. From the Upper Colorado River, 30,000 acre-feet of water will be diverted to Utah's Wasatch Front and then into lower Sevier River Basin via the central Utah project.

Virge Brown, Sevier County commissioner and chairman of the six-county Agricultural and Natural Resource Committee, said that diversion of the 30,000 acre-feet of water is the key to water-resource development in the Basin.

And Jack Monroe, chairman of the SCD Steering Committee, explained: "A basinwide program is needed if we are to develop the water resources of the Sevier. Present water rights must be protected. All the people should share in the improvements and benefits."

Another source of water can be found in 12 known underground reservoirs with estimated storage of 424 million acre-feet — 550,000 acre-feet of which is in the upper 200 feet of the reservoirs. Conservation of present supplies and development of these underground reservoirs could provide dependable water for the 333,000 acres of presently irrigated cropland.

Increased tourism is expected to bring added revenue. Three hard-surfaced highways crossing from north to south are routes to popular recreation spots: Bryce, Zion, and Cedar Breaks National Parks, Glen Canyon National Recreation Area, and the Grand Canyon National Park.

The investment needed to improve the economy and quality of life in the six-county area is estimated at $19 million. Expected benefits should make it a wise investment. ♦

Land, big sky, and water from the mountains make up central Utah's storehouse.

Good soil, good food . . .

Firm looks to SCS for location help

An international food packaging company relies on soil scientists of the Soil Conservation Service to help decide where to produce its fruit and vegetables and where to build its plants.

In fact, decisions in the use of soils are so important the firm employs its own soil scientist.

"The area soil scientist of SCS is the most useful person I deal with," asserted Walter Raitanen, soils specialist for the firm, Libby, McNeill, and Libby.

"Soils and their management affect every stage in fruit and vegetable production," he explained. "They also affect the timing of the harvest and the uniformity of the product."

Raitanen is a member of the research team of the firm's agricultural research center near Janesville, Wis. He carries the title of soil scientist. Investigations of potential production sites take him to many parts of the United States and to several foreign countries.

"The area soil scientist covers eight or so counties and is well acquainted with the soils—their problems and their good qualities," Raitanen said. "With him I can start getting down to business."

In seeking suitable production areas within a state, the company first refers to a general soil association map of the state.

"We contact the departments of horticulture and soils of the State University and other state offices for their recommendations," Raitanen explained. "We then go into the recommended areas for more detailed information. With guidance from the SCS soil scientist, we look at the general soil map of individual counties in the area to select the best soil associations. From the published soil survey of each county we can get acreage data of these selected soils. If there is no published soil survey of a county, the SCS soil scientist usually has the information we need."

Raitanen emphasized that there are considerations other than soils that help determine where his company locates its plants and distribution centers. Among these is climate —the length of growing season, rainfall distribution, and chances of hail damage. Management has to decide, too, what location is best for transportation, labor, and marketing.

"But soils information is basic. We want a well to moderately well-drained soil—or, if irrigation is available, excessively drained soils will do. We also try to stay within a range of 2 to 3 percent slope."

According to Raitanen there are two prime considerations in choice of soils. These are ability to produce uniform, high quality fruits and veg-

A detailed soil survey aids Walter Raitanen of Libby's (left) and Everett C. Anderson of SCS in judging merits of a proposed plant site.

etables and ease of access to fields at harvest time.

"The one distinct difference between vegetable crops and, say, field corn or other grain crops is that most vegetable crops require a strict planting and harvesting schedule," Raitanen said. "Let's take sweet corn. It is planted in sequence over several weeks. When one planting is ready, it must be harvested that day. And the entire planting must be taken. With field corn, if part of a field isn't ready the whole field can wait.

"We have some crops that can wait—like pumpkins, beets, and carrots. But timing the harvests of peas, sweet corn, and green beans is very critical. Now that we're using mechanical harvesters, tomatoes are also getting on the critical harvest list. So we need uniformity in the soil and slope. We can't wait for a wet swale to dry up so we can get into the field."

The firm follows soil building practices, including planned rotations, on the land it leases and operates. Its aim, however, is to lease land and contract for production on land with a minimum of conservation problems. The deep black, nearly level, soils that surround their Janesville plant are typical. The company first seeks out large areas of desirable soils. Then, when it is established in an area, its fieldmen go out to contract with growers.

"This is where the detailed soils map really helps," Raitanen asserted, "and we can depend on SCS soil scientists and district conservationists of the individual counties for whatever information is available even when there is no published soil survey."

He cited an example near Rochester, Minn., where soil information was available only on the original field sheets prepared by the SCS soil scientist.

"The soil scientist told me it would be 5 years before the soil survey would be published. This looked like a real good vegetable growing county, but Libby couldn't wait 5 years," Raitanen recalled.

Raitanen purchased copies of the field sheets and cut them up to make a mosaic. Using the soil interpretations provided by the SCS soil scientist, he made a capability map indicating the desirability of different areas for growing vegetables.

"We make fertilizer recommendations to our growers, and the fieldmen also do the soil testing. Practically all residues are left in place. We farm some of our own acreage, too. The grower hesitates to make the more hazardous first and last plantings, so our farm manager takes charge of this. And then there are some (fussy) crops like lima beans that some inexperienced growers don't want to produce. An unhappy grower is mighty poor advertising," he added.

Soil Scientist Raitanen would like to see more rapid completion of the national cooperative soil survey by SCS and cooperating agencies. Shelves of his library are lined with published surveys. He waits eagerly for the next one. They're basic to decision-making for both the company and its growers, he declares.

"Who suffers if we get into the wrong area and the soils are unsuitable?" he asks. "We contract with the farmers. When they get a poor crop they're not making any return. We would have to close up and move."

Libby, McNeill, and Libby has its executive offices in Chicago, Ill. Its operations are carried out throughout the United States, the United Kingdom, Western Europe, and Puerto Rico. Like other companies that grow perishables, it finds the hazards great and the stakes high. It must, therefore, deal in percentages. Reliable soil information in the hands of good managers helps to keep those percentages favorable.—KENT ALVERSON, *information specialist, SCS, Lincoln, Nebr.* ♦

Sign of the times

Increasing in popularity among SCS personnel is a new shoulder patch featuring the agency's official trademark. The patch—worn here by Jim Mitchell of the river basins staff in Washington, D.C.—is embroidered in three colors on a black background.

Contour strips in the nursery

To the nurserymen of Warren County, Tenn.—and there are 169 of them with a gross in sales of $10 million—contour stripcropping is an important conservation practice.

Reducing soil loss and conserving moisture are principal reasons for its use, but there are other reasons, too, as noted by leading nursery growers:

"I am growing higher quality plants and very few culls as a result of stripcropping," reported Edward Porter, who mentioned also the appealing sight of contour strips on the nursery land.

"We might say that environmental improvement and beauty are extras we get from stripcropping," Hiram B. Stubblefield, head of a leading nursery, observed. "I consider the direct benefits—the reduction of soil loss, higher quality plants, and better moisture conditions."

"By using the alternate sod strips as roads we save countless hours of labor in our operations," F. C. Boyd, Jr., vice president of another nursery pointed out. "We can pull alongside the nursery strips and load heavy balled plants easily."

D. P. Henegar added: "Warren County ships more nursery stock than any other county in Tennessee, and the plants are grown all over the world. Conservation of our basic resource is essential in protecting and improving this industry."

The chairman of the Warren County Soil Conservation District, F. L. Willis, said district records show that more than 1,200 acres of commercial nursery stock in the district is grown in contour strips. Other useful practices that the specialists of the Soil Conservation Service have helped the nurserymen plan and install include diversion terraces, sod waterways, and field boarders, he said.—WILLIAM G. REAGAN, *district conservationist, SCS, McMinnville, Tenn.* ◆

XUM

Conservation in action . . .

No-till method suits Illinois farmer

Some form of conservation tillage is desirable for every farm in Illinois," observed Robert Holloway, who farms 560 acres with his brother in the rolling hills of Randolph County in southern Illinois.

Holloway planted 300 acres of corn this spring with his new "no-till" planter, which seeds directly into stubble from the previous crop instead of planting on bare soil which would be subject to blowing or washing. It was his third year using the no-till method. Last year his net profit on no-till corn was $93.45 an acre. That was by "farmer arithmetic," as he calls it, with no charges for interest on investment, machinery, taxes, or labor. His average yield was 101 bushels. He sold the crop for $1.23 a bushel, giving a gross return of $124.23 an acre.

Holloway's 4-year crop rotation goes like this: First year, wheat with clover sown as a cover crop; second year, corn in the clover with no tillage; third year, corn with no tillage; fourth year, soybeans following one chisel plowing.

Holloway also uses his no-till planter to plant sudex in permanent pasture. This he green chops for his 60-cow dairy herd.

Three years ago his 40 acres of no-till was the first in Randolph County. Last spring, some 7,000 acres was planted by the no-till method.

"The only hope we have of preserving our soils in this area of the country is to till the land as little as possible," said Holloway. "Just look at the siltation that is occurring in some of the lakes right in the flatest areas of Illinois if you don't believe we have erosion problems in the Corn Belt."

This conservation farmer is past president of the Illinois chapter of the Soil Conservation Society of America. He recently was appointed county executive director of the Agricultural Stabilization and Conservation Service in nearby Monroe County, Ill.—JERRY D. SCHWIEN, *information specialist, SCS, Champaign, Ill.*

West Virginia

Before buying, board wants soil information

The Board of Education of Jefferson County, W. Va., uses soil information obtained from the Soil Conservation Service in selecting school sites.

"We want to know whether there are any site problems before we buy," School Superintendent Ted A. Lowery explained.

The board first considers a site on the basis of all other factors, Lowery said. Then SCS is asked for soil information on the site. The information is turned over to the architect for study.

Construction is to start this year on three sites chosen partly on the basis of soil information. Two elementary schools, at Bardane and Summit Point, will be built to consolidate seven schools of two, three, or four rooms each. A new central high school also will be built.—JAMES E. THORN, *information assistant, SCS, Morgantown, W.Va.*

Tennessee

District's first chairman enjoys a glance backward

Jason Crouch, long a supervisor of the Pickett County Soil Conservation District in Tennessee, was remembering . . .

"I was farming 42 acres when I got into work with the district," he said. "It took 5 or 6 acres per head for my poor grade cattle. The sale of 15 to 20 hogs along with the few calves and the eggs from 100 hens was our total farm income in those days—in the early forties."

Crouch, the district's first chairman, stepped down from his long service on the district board in 1962. His son Coleman took his place.

Father and son now own and operate nearly 1,000 acres and have a herd of 100 registered Angus. About 250 acres is in pasture and hay, and 10 acres in cropland. The rest is timber, gradually improving, through selective harvesting.

"We now figure on 2 acres of pasture per mature cow," Coleman said. "We try to manage all our pastures properly by liming, fertilizing, clipping as needed, and following good grazing practices. We built three ponds for livestock water, planted 41 acres of steep or gullied land to trees, and converted gullied natural drainageways to grassed waterways."

Before Jason bought his first tractor in 1949, a team of mules had provided the power on the farm.

"One difference between our horse-and-mule days and now," Coleman chuckled, "is that now the horses don't do any work. My boy Jeff claims one horse and a nephew the other."

Jason likes to recall the time the Pickett County District won the Goodyear Award in 1958 as the outstanding district in Tennessee. He visited the Goodyear Farms in Litchfield, Ariz., representing his district.

"There have been many changes," the elder Crouch remarked. "For instance, our 1½ acre burley tobacco crop last year averaged nearly 3,500 pounds an acre. I can remember when I considered 1,500 pounds an acre a good yield. Also, 3 to 4 acres of corn fills our 65-ton upright silo. Changes like this prevail all through the district."

"Dad still gives me some fatherly advice on how the district should

be run," Coleman said. "And if you want to see him mad, let him see a load of logs that have been cut too soon."

Although Jason is retired as a soil conservation district supervisor, he is still a leader in conservation in his county and area. Both Crouches were active in the organization of the 11-county Hull-York Lakeland Resource Conservation and Development Project, of which Pickett County is a part.—A. K. BOOHER AND B. Q. HARRISON, *RC&D Project coordinator and district conservationist, SCS, Byrdstown, Tenn.* ♦

Meetings . . .

A look at children

The White House Conference on Children to be held December 13-18 in Washington, D.C., will be concerned with the interests and problems of children aged 0-13.

Aim of the conference (held once each decade since 1908) is to define problems, seek new knowledge, evaluate past successes and failures, and outline alternative courses of action to face the Nation's new challenges.

The Conference on Children invited some 1,500 suggestions from state units, private groups, federal agencies, and individuals across the country. In attendance will be 4,000 delegates from national and state organizations and federal and state officials.

A "forum" structure was planned for the conference to avoid the mere reading of technical papers. The forums include: Individuality; learning; health, parents, and families; communities and environments; laws, rights, and responsibilities; and child service institutions.

At each forum the finest minds available from many disciplines and backgrounds—lawyers and educators, mothers and behavioral scientists, doctors, and administrators —will explore together the worlds of children, recommend ways to improve the quality of life for them. Followup regional conferences will be held in spring 1971 to implement recommendations made at the December White House Conference.

AAAS presses hard on environment

"Environmental Problems and Urban Affairs" and "Living World" are among several themes the American Association for the Advancement of Science will present at its annual meeting December 26-31 in Chicago.

Some of the subjects on the first theme are "Urbanization in the Arid Lands," "Reducing the Environmental Impact of Population Growth," "World Cities of the Future," "Is Population Growth Responsible for the Environmental Crisis in the United States?," "Systems Approach to Environmental Pollution," "Solutions to Environmental Problems," "Industrial Approaches to Urban Problems," "Man's Impact on the Global Environment," "Public Policy for the Environment," and "Agriculture and the Quality of the Environment in the Seventies."

Subjects on the second theme include: "Some Mathematical Questions in Biology; "Parthenogenesis," "Plant Population Dynamics," "Water Quality and Fisheries in the Upper Great Lakes;" and "Human Ecology."

Engineers involved in environment

The American Society of Agricultural Engineers will hold its annual meeting December 7-11, Chicago, Ill. The major topics to be discussed include electric power and processing, food engineering, power and machinery, soil and water, structures and environment, and professional development.

Cities discuss their resources

The 44th annual congress of cities of the National League of Cities will have as its theme "The City . . . Its Resources, Systems, and Structure," and will be held December 7-11 in Atlanta, Ga.

Concurrent sessions will consist of eight panels: The property tax and alternatives; using dollars where they do the most good; urban government in metropolitan areas; city hall and its communities; new systems to assist in making better public policies; facilitating the introduction of new systems and products into city uses; labor-management relations; and the new urban politics and its meaning.

Manufacturers—all for quality

The National Association of Manufacturers will hold its 75th Congress of American Industry December 3-4 in New York. Theme of the meeting is "Quest for Quality." The Congress plans to explore, in depth, key facets of the drug problem and dissent within a lawful society. The association has long been interested in soil and water conservation and environmental improvement.

Dates and places

December 3-4, National Association of Manufacturers, New York, N.Y.
7-11, National League of Cities, Atlanta, Ga.
7–11, American Society of Agricultural Engineers, Chicago, Ill.
13–18, White House Conference on Children, Washington, D.C.
26–31, American Association for the Advancement of Science, Chicago, Ill.
27–30, American Agricultural Economics Association, Detroit, Mich.
January 1971
12–13, National Council of Farmer Cooperatives, Washington, D.C.
18–21, National Woolgrowers Association, Las Vegas, Nev.
24–28, American National Cattlemen's Association, Las Vegas, Nev.
17–21, National Association of Home Builders, Houston, Tex. ♦

Review

Population, Resources, Environment: Issues in Human Ecology. By Paul R. Ehrlich and Anne H. Ehrlich. *1970. W. H. Freeman and Company, San Francisco. 383 pp., illus. $8.75.*

Paul Ehrlich, professor of biology at Stanford University, is best known for a paperback best seller, *The Population Bomb,* published in 1968. This year, in a large sized, hardcover volume with his wife, Anne, as coauthor, Dr. Ehrlich has expanded the thesis of the earlier book to include the total environment and its relation to overpopulation.

The book brings together materials from a great many sources, many of them periodicals and reports, and the reading lists at the end of each chapter furnish useful reference material. Dr. Ehrlich concentrates mainly on the deterioration of the environment and finds the outlook for the survival of man gloomy.

Like many of the new environmentalists, the Ehrlichs define the conservation movement in this country in preservationist terms. For the most part, references to Federal Government resource agencies are critical of programs and policies. The solution offered is for a super-Department of Population and Environment which would include a new and powerful office of Environmental Quality. This super-agency would monitor activities of USDA, HUD, and Department of Transportation, and other resource programs in the Federal Government.

The Ehrlichs maintain a rapid pace and high-key approach throughout. It is slightly disconcerting, then, to find toward the end of the book a small offering of aspirin to lessen the discomfort and assuage any pain the previous 300 pages have caused those readers who have not already left to cut their throats. "It has been our aim to produce a . . . sourcebook for the study of questions related to population, resources and environment . . . Nothing in this book is intended to cause feelings of guilt, resentment or defensiveness . . . It is not our purpose to offend anyone ."

And as a further antidote, may I recommend the salty philosophy of Ian McHarg in *Design With Nature.* —Katharine N. Mergen, *Information Division, SCS, Washington, D.C.*

New publications

The Practice of Water Pollution Biology. By Kenneth M. Mackethun. *1969. U.S. Dept. Int., Federal Water Pollution Control Administration. 281 pp., illus.; paper. $1.50.* As more and more workers in different professional fields find themselves involved with pollution-control problems, there has been a growing need for a practical treatment of the subject in terms usable by all. This book effectively meets this need.

"It is written principally for the biologist inexperienced in these activities," says the preface, "and for . . . others who are interested in broadening their understanding of this discipline.

"The book considers the many aquatic environments, their biotic constituents, and the effects of various pollutants upon them . . .

"Individual water quality constituents that affect the aquatic environment are discussed . . .

"Examples of field investigations, including data collection, analyses, interpretations and display are given for organic wastes, silts, toxic wastes, acid mine drainages, eutrophication, and radioactive wastes. Investigations in marine waters are discussed. Separate chapters detail the biology of municipal water supplies and sewage treatment. Biological nuisances and slimes are discussed, as well as their control."

The text is well supported by clear illustrations and an extensive reading list.

White House Conference on Food, Nutrition and Health, Final Report. *1970. (U.S. Govt. Print. Off.) 341 pp.; paper. $3.00.* The findings and recommendations of the Conference, convened in Washington, D.C., in December 1969 in response to the President's message to Congress on food and nutrition, cover a wide range of topics concerned with the adequacy, safety, and nutritional quality of the food Americans eat. One panel, considering the long-term trends in food production and supply, concluded "that this country has the ability —provided proper Government food policies are followed—to produce all of the nutrients our expanding population will require for the foreseeable future."

An Economic Analysis of the Iowa Rural Renewal Area. *1970. USDA Economic Research Service Agr. Econ. Rpt. 181. 54 pp., illus.* Economic trends in the 1960's in the Iowa rural renewal area, Appanoose and Monroe counties, show that the level of economic activity increased in the area but was clearly below the level for the state. These trends suggest that to bring economic opportunities in the area up to those available to other residents of Iowa, the area's annual rate of growth in the 1970's must be double the rate of the 1960's. New approaches to double the annual rate of growth include (1) increases in employment in the manufacturing sectors not related to agriculture and (2) comprehensive planning at the multicounty level.

TRAS, a Computer Program for the Projection of Timber Volume. By Robert W. Larson and Marcus H. Goforth. *1970. USDA Agr. Hbk. 377. 24 pp., illus. $0.40.* Describes the use of the TRAS (Timber Resource Analysis System), a procedure developed to:

Update inventories to a common date for periodic national compilations of timber resource statistics; help analyze and interpret changes in the timber resource between surveys; and project future timber supplies under alternate management assumptions.

Facts About Resource Conservation and Development Projects. *1970. USDA Soil Conservation Service SCS-CI-14. [4] pp., illus.* Tells how multicounty RC&D projects help communities improve natural resources and living conditions. The projects are locally initiated, sponsored, and directed. CI-14 presents the steps that local sponsors must follow in setting up an RC&D project, and outlines the technical assistance and financing available from USDA agencies in approved projects.

Artificial Reforestation Practices for the Southwest. By Gilbert H. Schubert, L. J. Heidmann, and M. M. Larson. *1970. USDA Agr. Hbk. 370. 25 pp., illus. $0.35.* Recommends planting over direct seeding and gives instructions in (1) methods for production of planting stock, (2) site preparation, (3) planting of nursery grown seedlings, (4) broadcast sowing, and (5) plantation care and protection from fire, insects, disease, rodents, and browsing animals.

Teaching Soil and Water Conservation, a Classroom and Field Guide. By Albert B. Foster and Adrian C. Fox. *Slightly rev. 1970. USDA PA-341. 30 pp., illus.*

XUM

Recon . . .

America's soil is the "healthiest" of our resources as tabulated in the National Wildlife Federation's second Environmental Quality Index, but it is slipping because "we are not making wise use of our land." Priorities in the report:

(1) "We need a bold and comprehensive National Land and Water Plan . . . We need Federal encouragement to states to develop statewide zoning. We need local plans and zoning—all dovetailing together. And the people must have a voice in these decisions, must have a chance to help plan the kind of America they want. Public hearings must be held before decisions are made on issues affecting the quality of our environment.

(2) "We urgently need an informed and aroused public, with a new ecological philosophy. As Americans, we will get the kind of EQ that we ask for, work for, vote for, and pay for. There are no simple formulas or magic solutions. Apathy is our only bar to success."

Rural towns take note

"When planning for development, there is a tendency to concentrate mainly on ways to attract new industry and retail business and thus create a flourishing community. This course, however, often bypasses the very important overlook of community services that will be needed by a larger population with progressive ideas. Many of the people communities hope to attract may have been accustomed to better facilities than some rural communities can offer. New citizens in a town expect schools to be good enough to prepare their children for college. They take it for granted that a good library will be close by. They expect adequate police and fire protection. They assume that the services of health facilities, hospitals, and doctors are available for them and their families. Some of these community services are the very ones that are deficient in rural areas. And a community can't hope to draw and hold new people if it lacks any of these amenities of community life. Many of these services have to be planned well in advance . . . "—*Farm Index*, September 1970.

Put that in your pipes

"If you could bag the oxygen given off by 625 square feet of turf, it would sustain a grown man for a year."—GEORGE MCVEY, *scientist, O. M. Scott & Co., Marysville, Ohio.*

Dairymen in Wisconsin dispose of cattle wastes by converting it to liquid form as valuable fertilizer.

The system consists mainly of tanks to store the raw manure to which water has been added. Machines agitate the mixture, and pumps draw it out when the liquid is to be used on cropland.

The trend in the state is toward larger herds, with fewer cows on pasture. About two-thirds of the manure produced by the confined herds—30 million tons or so—must be transported to the fields for fertilizer use.

Some farms, according to a survey by the University of Wisconsin in cooperation with the Economic Research Service, use the new system exclusively. Others are using it in combination with conventional methods. The study showed the system to be profitable for herds of more than 50 cows. Value of the liquid manure averaged $32 per cow per year.

A better farm life

A recent recommendation of the "Goals for Louisiana Committee" compliments and challenges SCS and conservation districts, reports State Conservationist J. B. Earle. The goal reads: "Further effective utilization of technical, financial, and other assistance from all state and federal agencies and all industrial sources is a vital part of moving toward the goal of a better farm life."

"In addition to the continuation of basic and applied research and its dissemination, other pressing programs deserve a new emphasis. The thorough inventory of soil resources as provided by soil surveys in each parish encourages the optimal usage of land through informed and rational planning. Their completion would provide the basis for a well-knit, comprehensive, land use plan which would maximize the economic and social benefits of our land and other natural resources. A land use plan should provide for the most efficient development of (a) conservation and flood prevention projects, (b) outdoor recreational facilities, (c) watershed development projects, and (d) fish and wildlife habitats. Through these types of programs the future of rural communities will be enhanced and new jobs and improved services will complement the increasingly attractive advantages of an uncomplicated environment."

It's been said

"We might dig out and re-run the sermons of Pinchot and Bennett, thus relieving the current crop of evangelists of the obligation to awaken the public. After all, everything has been said before, and their energies would be more useful in doing the job at hand than in warning of the wrath to come."—*Leland duVall, Arkansas Gazette, Feb. 20, 1970. (from article "It's Time to Use Know-How of SCS").*

Do what you can

The President's Task Force on Rural Development reported that "If this is to be a happy and healthy Nation in the years ahead, our growing industry and our increasing population must spread out instead of continuing to pile people and industrial plants into compacted urban areas.

"It is in the rural countryside areas that we can find generous resources of clean air, clean water, living space, recreation, scenic beauty, transportation potential, tranquility and inspiration for tomorrow's people. And it is there that we can most readily and economically develop and preserve these natural resources in living harmony with man as our population expands in the generations ahead."—from The Report of the President's Task Force on Rural Development titled "A New Life for the Country."

From the Administrator:

Land and people

"Land use planning" is a phrase that conjures up many different pictures:

—Two men around a farmhouse kitchen table deciding what to do with one small field.

—A big-time rancher working out the best use of 50,000 acres.

—A conservationist and a housing developer considering ways to curb soil erosion and sediment on a 160-acre tract of sloping land in a builtup area.

—A major activity in small watershed projects and resource conservation and development projects.

—And a major assignment for town and city officials and regional, state, and multistate groups.

The Soil Conservation Service is a part of every one of these pictures. We bring to the scene a solid record of on-the-land accomplishments, many kinds of resource surveys and studies, and the expertise and know-how built up over 35 years of land use and conservation-treatment work.

We also bring the basic concept that you cannot plan for land without planning for water, and you cannot plan for either without planning for—and with—people. The technical concerns of resource planning may differ enormously at the different levels of work. But the bedrock belief that any planning worthy of the name must consider people and their **total** natural environment is exactly the same whether the atmosphere is a 40-acre cornfield or a 40-story office building or—for that matter—the halls of Congress.

Last year, we helped more than a million conservation district cooperators; compiled and furnished more than 6,000 inventories and evaluations of resource data, and made major inputs into 900 resource plans.

Pick almost any spot on the map and we are—or were—there, with soil surveys, watershed studies, day-to-day action in helping people improve their environment through better use of resources.

To name a few:

—We provide Maine's Environmental Improvement Commission with needed resource information for proposed new building sites.

—We provide soil and hydrologic information for the seven-county Southeast Wisconsin Regional Planning Commission. The commission estimates the soil information alone can save Wisconsin people $300 million in the next 25 years.

—We are working with the Northeast Illinois Natural Resource Service Center, which provides a wide variety of resource information to citizens and government agencies. When fully operative, the center's computerized NARIS system (Natural Resources Information Retrieval System) will provide useful facts about every 40-acre land area within the eight counties involved.

All this planning work is done in full partnership with local conservation districts. Thousands of men and women who lead district programs contribute to the conservation planning and action job an unrivalled grass-roots knowledge of land and water management.

From half a farm to half a Nation, SCS has been involved in land use planning for 35 years. Today there is concern for a national land use policy. We'll be involved in that too —with basic resource information and the proved philosophy that land and water planning should be done for—and with—people.

Kenneth E. Grant

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